**Research Plan Generator**

Student Name(s):

Grade (6-12):

**RATIONALE:**

This is a brief summary of the background that supports your research problem and explain why this research is important. Explain any societal impact of your research.

**RESEARCH QUESTION(S) and/or ENGINEERING GOAL(S):**

What is your question(s) or engineering goal(s) and how is it based on the rationale described above?

**HYPOTHESIS(ES), ENGINEERING GOAL(S) and/or EXPECTED OUTCOMES:**

**PROCEDURES:**

Detail all procedures and experimental design including methods for data collection. Describe only your project. Do not include work done by mentor or others. However, do detail if you have an adult operate equipment on your behalf for your project and what kind of results you received back from the adult to continue your work/analysis.

***If the project contains human participants (if not, leave blank- or you may delete this section):***

**Human participants research:**

**Participants:** Describe age range, gender, racial/ethnic composition of participants. Identify vulnerable populations (minors, pregnant women, prisoners, mentally disabled or economically disadvantaged).

**Recruitment:** Where will you find your participants? How will they be invited to participate?

**Methods:** What will participants be asked to do? Will you use any surveys, questionnaires or tests? If yes, and not your own, how did you obtain these and did it require permissions? If so, explain. What is the frequency and length of time involved for each subject? (Attach copies of all surveys, questionnaires, tests, or photos shown to subjects)

**Human Subject Risk Assessment:** What are the risks or potential discomforts (physical, psychological, time involved, social, legal, etc.) to participants? How will you minimize risks? List any benefits to society or participants.

**Protection of Privacy:** Will identifiable information (e.g., names, telephone numbers, birth dates, email addresses) be collected? Will data be confidential/anonymous? If anonymous, describe how the data will be collected. If not anonymous, what procedures are in place for safeguarding confidentiality? Where will data be stored? Who will have access to the data? What will you do with the data after the study?

**Informed Consent Process:** Describe how you will inform participants about the purpose of the study, what they will be asked to do, that their participation is voluntary and they have the right to stop at any time.

***If the project contains non-human vertebrate animal research (if not, leave blank- or you may delete this section):***

**Vertebrate animal research:**

a. Discuss potential ALTERNATIVES to vertebrate animal use and present justification for use of vertebrates.

b. Explain potential impact or contribution of this research.

c. Detail all procedures to be used, including methods used to minimize potential discomfort, distress, pain and injury to the animals and detailed chemical concentrations and drug dosages.

d. Detail animal numbers, species, strain, sex, age, source, etc., include justification of the numbers planned.

e. Describe housing and oversight of daily care

f. Discuss disposition of the animals at the termination of the study.

***If the project contains potentially hazardous biological agents (PHBA) (if not, leave blank- or you may delete this section):***

**Potentially hazardous biological agents research:**

a. Give source of the organism and describe BSL assessment process and BSL determination.

b. Detail safety precautions and discuss methods of disposal.

***If the project uses potentially hazardous chemicals, activities, and/or devices (if not, leave blank- or you may delete this section):***

**Hazardous chemicals, activities, & devices:**

a. Describe Risk Assessment process, supervision, safety precautions and methods of disposal.

b. Material Safety Data Sheets are not necessary to submit with paperwork. (Keep as reference for student researchers.)

**RISK and SAFETY** (***required for all projects***, even if no risk):

Identify any potential risks and safety precautions needed.

If hazardous chemicals, activities & devices, describe your Risk Assessment process, supervision, safety precautions and methods of disposal.

**DATA ANALYSIS:**

Describe the procedures you will use to analyze the data/results.

**BIBLIOGRAPHY:**

List major references (e.g. science journal articles, books, internet sites) from your literature review. Use MLA or APA or Chicago format. For websites, use the exact URL (not just Google, not the main page of the website) & the date you accessed the information. If you plan to use vertebrate animals, one of these references must be an animal care reference.

**PROJECT SUMMARY:**

If changes are made during the research, add those changes to your plan here. If no changes are made from the original research plan, no project summary is required. State “no changes were made to the original research plan.” NOTE: Some plan changes may require returning to the IRB or SRC for additional review and approvals. Include any updated approvals with your forms (modified forms signed again) due to changes in your plan and briefly explain in this summary.